The Army Game Studio's Agile Process: A Retrospective

Jay Olive
Development Lead, Army Game Studio

The Army Game Studio adopted Scrum because of a growing Team, growing Project sizes and the creation of a common Product line.

The Past

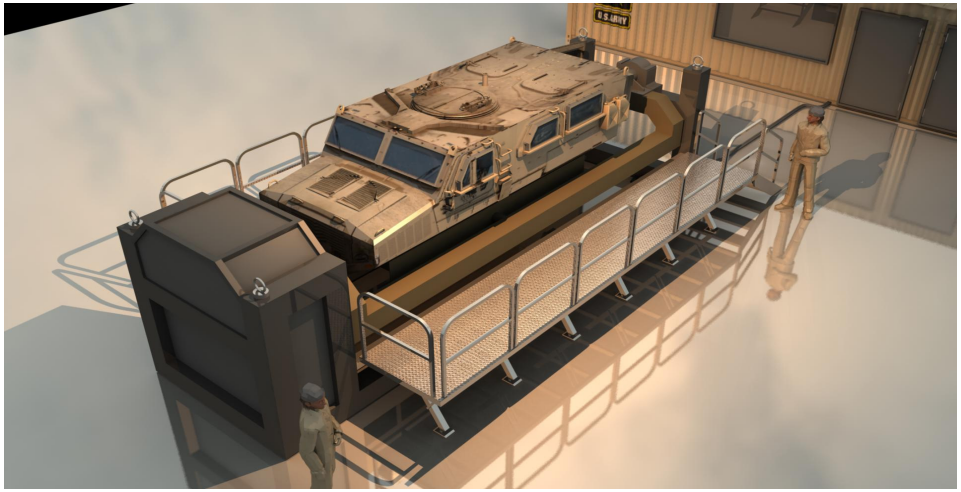
- Small Team
  - 15 People
- Half Dozen Concurrent Projects
- Tasking by Email or Over-the-Shoulder
  - Project Leads would go straight to Developer
  - This “process” remained largely unchanged as we continued to grow in size and project scope.

CBRN Dismount

- CBRN Dismount Prototype
- A Couple of Handheld Sensors
- Multiplayer
- Customer Wanted UE3
- Very Quick Turnaround

TRICT

- RG33 Simulator
  - Crew Skills
    - CROWS II
    - FBCB2
    - Driver
    - Commander
  - Rollover
    - Motion Platform
    - Egress Safely



TRICT / Origins

- Bulk of Requirements were given after we were funded
- Customer wanted to use Unreal Engine 3
  - No multiplayer AGS reuse platform to build from
  - No large environments to reuse
  - No CROWS II weapon simulation
- From napkin to drivable prototype in 18 months

TRICT / Initial Development

- Broken into Modules
  - Environment
  - Weapon Simulation
  - Multiplayer / Instructor Workstation
  - Vehicle Simulation
- Functional Leads were responsible for their own teams
  - No one person was ultimately responsible for a module...

TRICT / 6 Months In

- Behind Schedule
  - Environment
  - Multiplayer / Instructor Workstation
  - Vehicle Simulation
- On Schedule
  - Weapon Simulation
    - One Developer
- Poor Demonstrations from Developers
- Inconsistent Feedback from Project Leads
- Team was not communicating well
  - Code was not being reused between teams

TRICT / It's not You, It's Me…

- Not Developer's Fault
  - Their features were not being critiqued often enough
  - They were not being time-boxed appropriately
  - They didn't know who to communicate with
- Not Area Lead's Fault
  - They were managing requirements
  - They were managing pieces of Modules that were in their specific "functional" area

AAVP3

- America's Army Visualization Platform
  - Standardize UE3 Product Line
  - Common Baseline
  - Easier Asset Reuse
- Multiplayer
  - Instructor Workstation
- Vehicles
- Dismount

AAVP3 / Scrum

- Scrum was a process that fit our development style:
  - Requirements are never in stone, and most of the time are not completely known when funding occurs (design late)
  - Iterative, supported our customer feedback loop.
- Area Leads
  - Only role would be to critique work in their area.
- Developers
  - Could be time-boxed. This gave them a goal and sense of urgency for even small tasks.
  - Bugs were triaged quicker and in a standardized fashion.
  - Tasking could only come from Product Owner.
- Product Leads
  - Could see frequent demonstrations and could give these builds to customers for feedback.
  - Could effectively communicate what they wanted, straight to the developers, through User Stories.

AAVP3 / Sprint Teams

- Two teams
  - Not based on functional areas or specific projects, instead based on product features within a common product line.
  - Instructor Workstation / Vehicle Team
    - Programmers / Artists / Testers
  - Environment / Pawn Team
    - Programmers / Artists / Level Designers / Testers

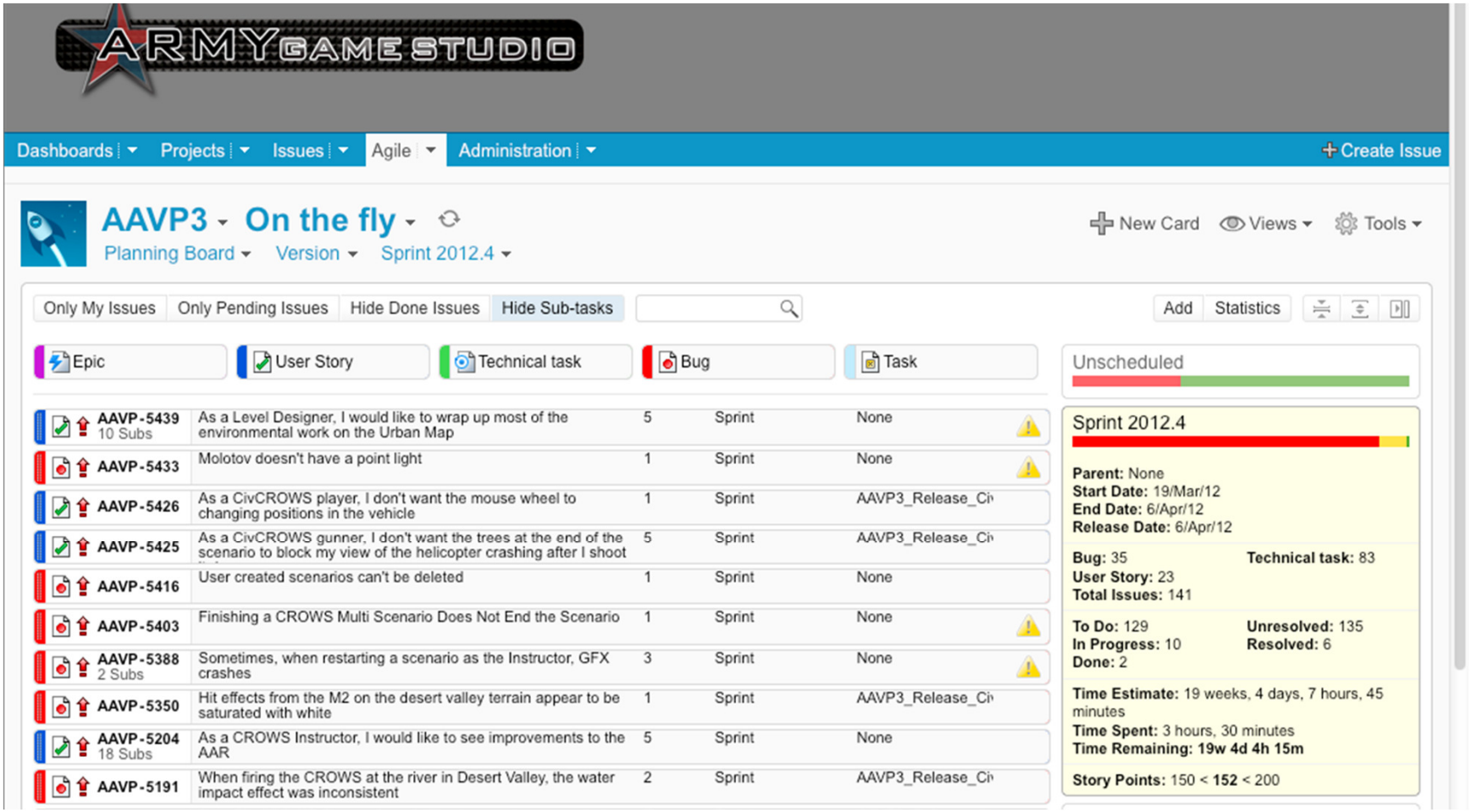
AAVP3 / Bug Reporting

- Bugs are reported and end up in the product backlog.
- They are triaged by Scrum-master every day and the appropriate Sprint Team is asked whether they can take it on
  - Bugs for features in development the current sprint are sent directly to that developer.

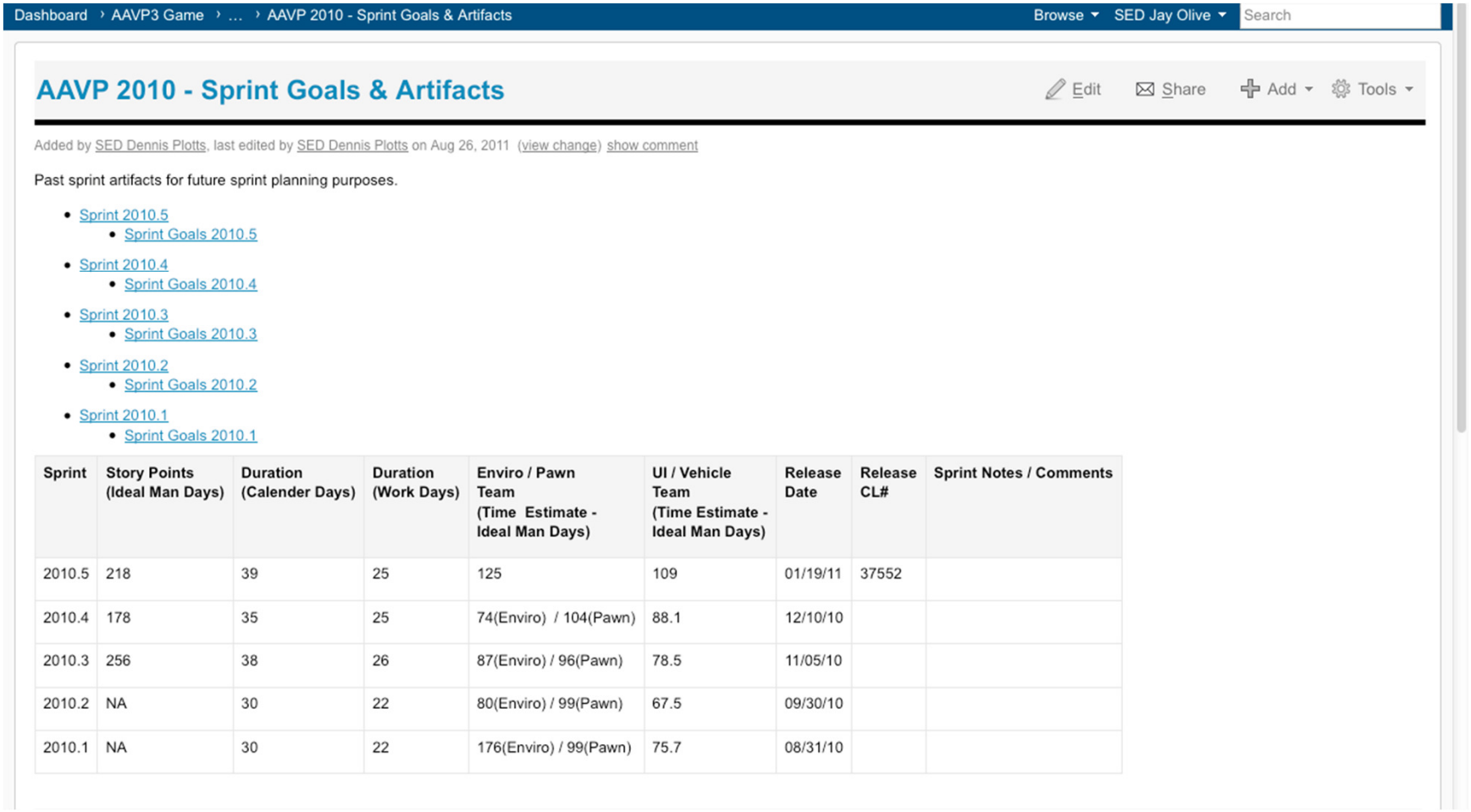
Tools

- **We need software to track:**
  - User Stories
  - Developer Progress
  - Sprint Cycles
  - Bugs
- **We need software that allows us to communicate:**
  - Design
  - Customer Feedback / Meeting Notes

Tools / JIRA


ARMY GAME STUDIO
Dashboards
Projects
Issues
Agile
Administration
Create Issue
AAVP3
On the fly
Planning Board
Version
Sprint 2012.4
New Card
Views
Tools
Only My Issues
Only Pending Issues
Hide Done Issues
Hide Sub-tasks
Add
Statistics
Epic
User Story
Technical task
Bug
Task
AAVP-5439 10 Subs
As a Level Designer, I would like to wrap up most of the environmental work on the Urban Map
5 Sprint None
AAVP-5433
Molotov doesn't have a point light
1 Sprint None
AAVP-5426
As a CivCROWS player, I don't want the mouse wheel to changing positions in the vehicle
1 Sprint AAVP3_Release_Ci
AAVP-5425
As a CivCROWS gunner, I don't want the trees at the end of the scenario to block my view of the helicopter crashing after I shoot
5 Sprint AAVP3_Release_Ci
AAVP-5416
User created scenarios can't be deleted
1 Sprint None
AAVP-5403
Finishing a CROWS Multi Scenario Does Not End the Scenario
1 Sprint None
AAVP-5388 2 Subs
Sometimes, when restarting a scenario as the Instructor, GFX crashes
3 Sprint None
AAVP-5350
Hit effects from the M2 on the desert valley terrain appear to be saturated with white
1 Sprint AAVP3_Release_Ci
AAVP-5204 18 Subs
As a CROWS Instructor, I would like to see improvements to the AAR
5 Sprint None
AAVP-5191
When firing the CROWS at the river in Desert Valley, the water impact effect was inconsistent
2 Sprint AAVP3_Release_Ci
Unscheduled
Sprint 2012.4
Parent: None
Start Date: 19/Mar/12
End Date: 6/Apr/12
Release Date: 6/Apr/12
Bug: 35
Technical task: 83
User Story: 23
Total Issues: 141
To Do: 129
In Progress: 10
Done: 2
Unresolved: 135
Resolved: 6
Time Estimate: 19 weeks, 4 days, 7 hours, 45 minutes
Time Spent: 3 hours, 30 minutes
Time Remaining: 19w 4d 4h 15m
Story Points: 150 < 152 < 200

Tools / Confluence



Dashboard › AAVP3 Game › … › AAVP 2010 - Sprint Goals & Artifacts Browse SED Jay Olive Search

AAVP 2010 - Sprint Goals & Artifacts

Edit Share Add Tools

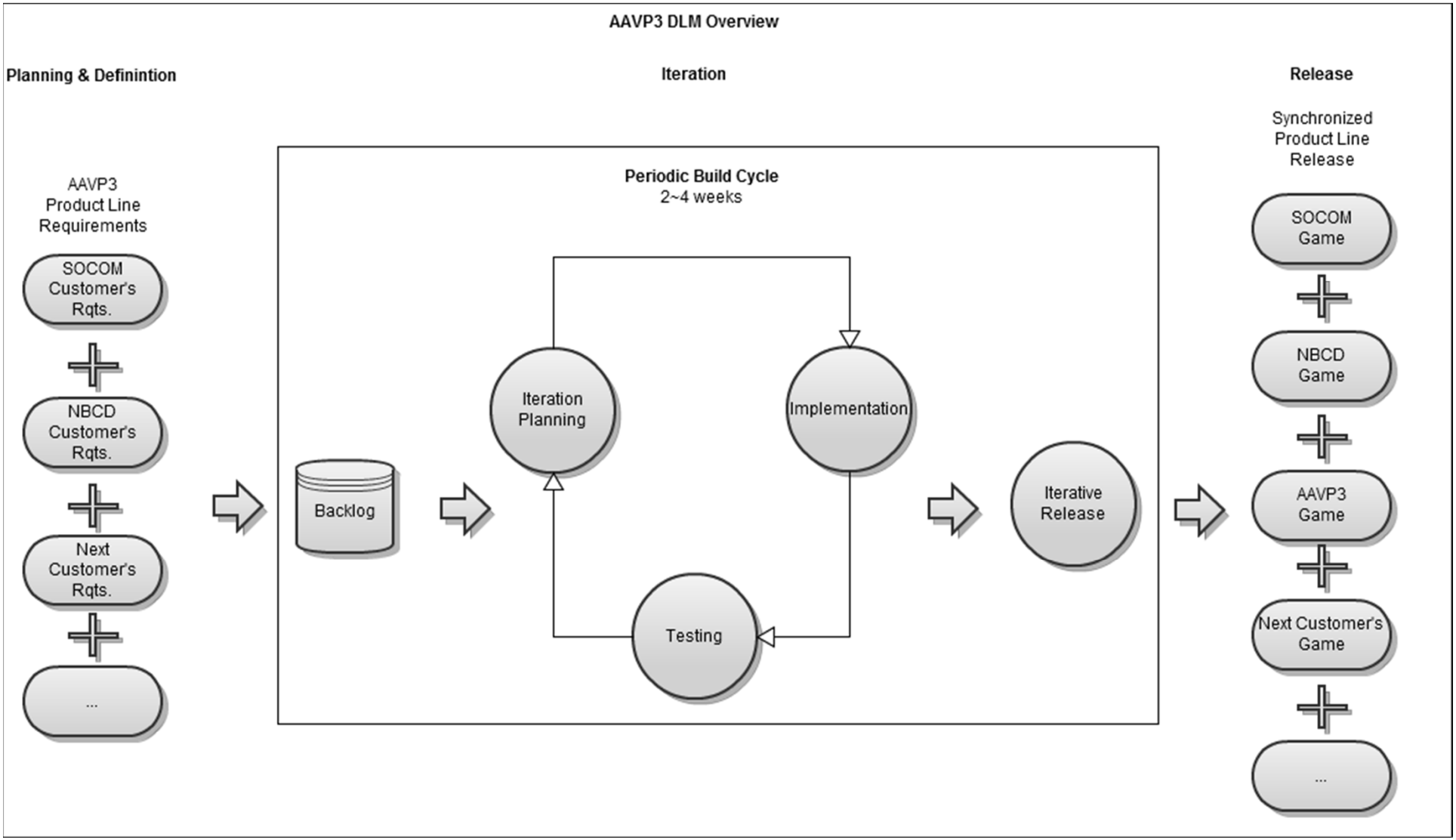
Added by SED Dennis Plotts, last edited by SED Dennis Plotts on Aug 26, 2011 (view change) show comment

Past sprint artifacts for future sprint planning purposes.

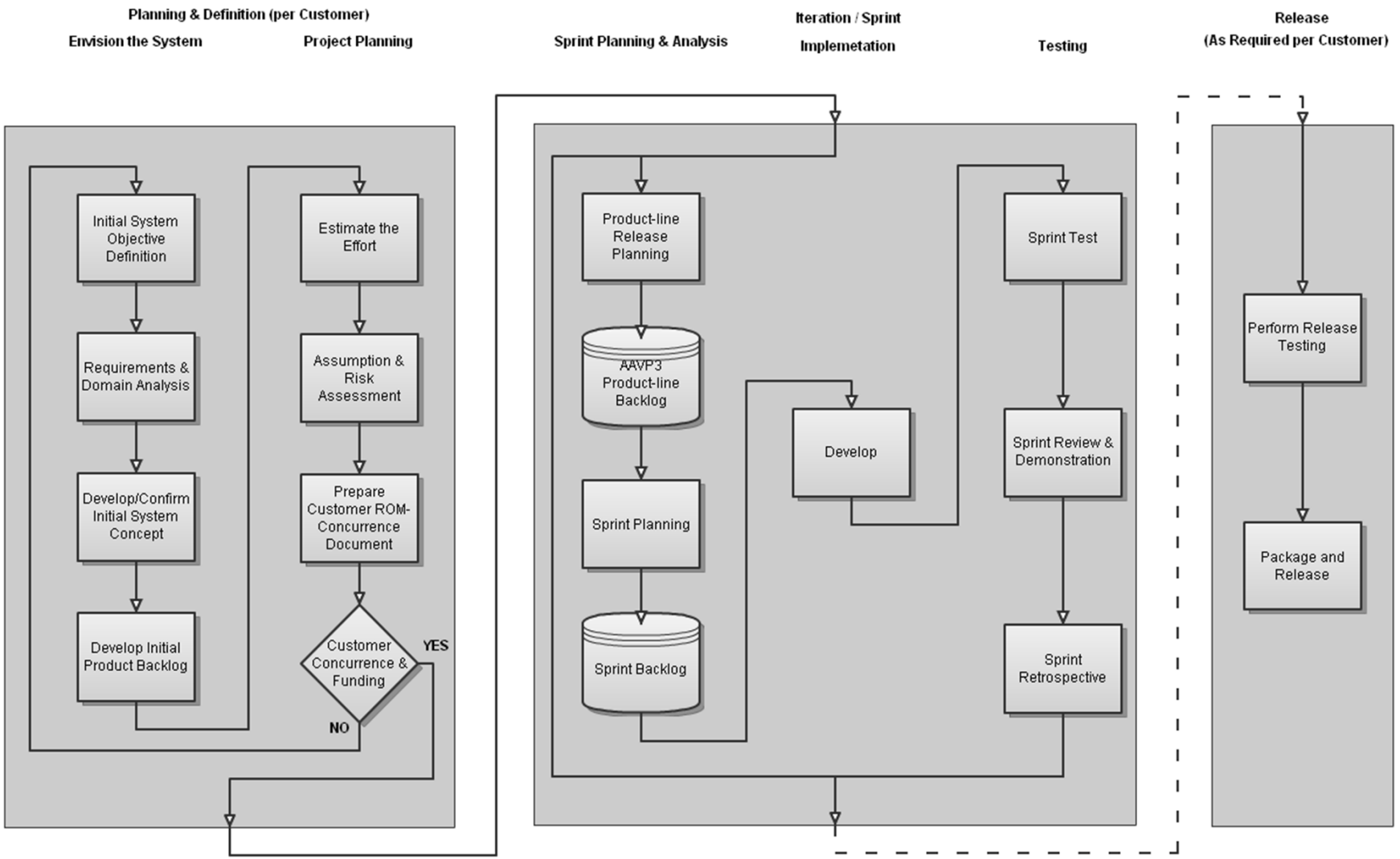
- Sprint 2010.5
  - Sprint Goals 2010.5
- Sprint 2010.4
  - Sprint Goals 2010.4
- Sprint 2010.3
  - Sprint Goals 2010.3
- Sprint 2010.2
  - Sprint Goals 2010.2
- Sprint 2010.1
  - Sprint Goals 2010.1

Sprint	Story Points (Ideal Man Days)	Duration (Calender Days)	Duration (Work Days)	Enviro / Pawn Team (Time Estimate - Ideal Man Days)	UI / Vehicle Team (Time Estimate - Ideal Man Days)	Release Date	Release CL#	Sprint Notes / Comments
2010.5	218	39	25	125	109	01/19/11	37552	
2010.4	178	35	25	74(Enviro) / 104(Pawn)	88.1	12/10/10		
2010.3	256	38	26	87(Enviro) / 96(Pawn)	78.5	11/05/10		
2010.2	NA	30	22	80(Enviro) / 99(Pawn)	67.5	09/30/10		
2010.1	NA	30	22	176(Enviro) / 99(Pawn)	75.7	08/31/10		

AAVP3 Development Lifecycle Model Overview



AAVP3 Development Lifecycle Model Overview

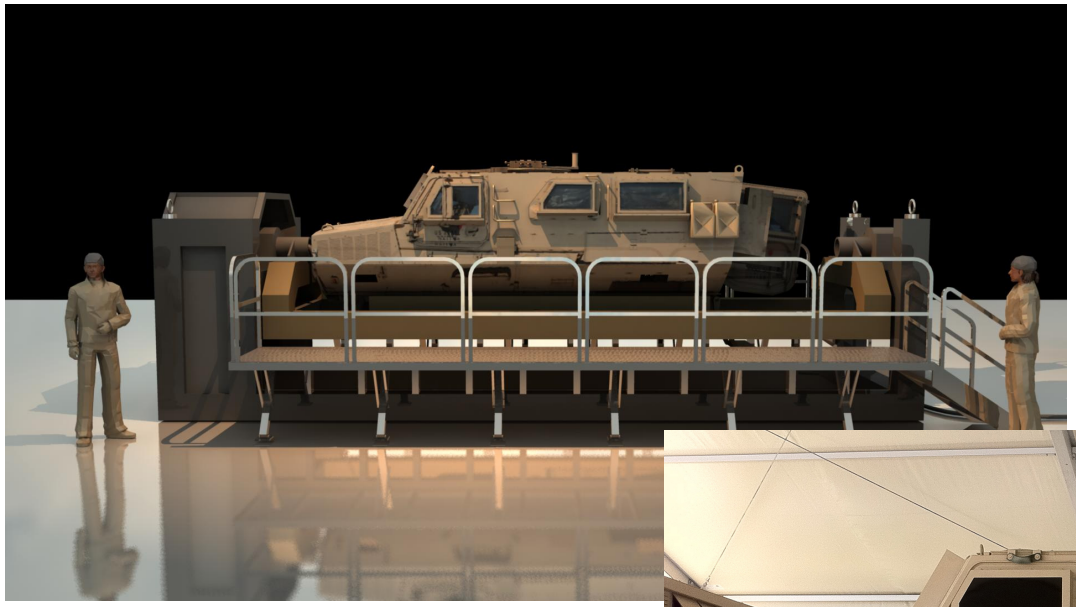


FOX

- FOX Simulator
  - Crew Skills
  - Sensor Simulations
  - Desktop and Fixed Simulator

- Reused everything in the AAVP3
  - Environments
  - Vehicle Models
  - IWS
  - Sensor Detection Models

TRICT / 18 Months / Hardware



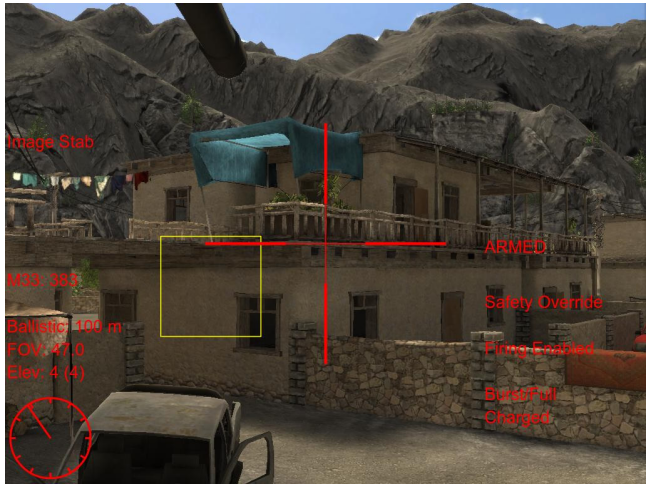
- All Doors / Hatches Open
- Interior Identical to Real RG33

- Motion Platform
- 180 Degree Roll in Both Directions

TRICT / 18 Months / Hardware

TRICT / 18 Months / Software

- Desert Valley Environment with Scenarios of varying difficulty.
- Instructor Workstation
  - Curveballs
  - AAR
- Vehicle Simulation
  - Controlling Motion Platform and Safety Features
- CROWS II Simulation



CBRN Dismount

- CBRN Dismount Prototype
- Four Handheld Sensors
- Joint Service Training
- Three Environments
- User-Defined Scenarios with Custom Contaminants

What Did We Learn?

- Retrospectives are extremely important
  - Act on the feedback immediately
- Experiment with different sprint lengths until one feels right
  - We always let the Developers determine the sprint length
- Don't appoint leaders in sprint teams, let them just appear on their own
  - This feels very counter-intuitive
- The daily meetings are crucial to communication
- Ideal days are way shorter than anyone thought they would be. We usually estimate ideal days at 2/3 of available days in the sprint. This has helped keep expectations in check with Project Leads.

What Did We Learn?

- Our Developers have taken ownership of our Products - they feel in control.
  - Product Proponents
- Code has become more reusable.
- Sprint Demos are a point of pride.
- We started giving story points to our bugs and it has helped in tracking velocity.
- Our velocity has steadily increased over time because we are forced to reevaluate ourselves at the end of **every** Sprint.
- Scrum allows Developers to just worry about developing.

The Present

- Large Team
  - Programmers: 31
  - Artists: 15
  - Level Designers: 4
  - Game Designers: 2
  - Support: 6
  - Test: 2
  - Project Leads: 12
  - Offsite Misc: 9
- Scrum is used on all software development.
  - AAVP
  - Mobile
  - Outreach
  - Prototype & Sustainment
- Dozens of Concurrent Projects.

Questions?

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Acronyms!

- **AAR** - After Action Review
- **AAVP3** - America's Army Visualization Platform 3
- **AGS** - Army Game Studio
- **CBRN** - Chemical, Biological, Radiological and Nuclear
- **CROWS II** - Common Remotely Operated Weapon Station, 2nd Generation
- **FBCB2** - Force XXI Battle Command Brigade and Below
- **IWS** - Instructor Workstation
- **TRICT** - Transportable Reconfigurable Integrated Crew Trainer
- **UE3** - Unreal Engine 3